BULL. BOT. SURV. INDIA

Vol 31, Nos. 1-4 : pp. 122-125, 1989

EUGENIA SINGAMPATTIANA BEDDOME (MYRTACEAE) — ITS STATUS AFTER REDISCOVERY FROM THE TIRUNELVELI HILLS, TAMIL NADU

P. Daniel and A. Rajendran

Botanical Survey of India, Coimbatore

ABSTRACT

Eugenia singampattiana Beddome, an endemic species of the Tirunelveli—Travancore Hills on the Western Ghats has been rediscovered after Beddome in the 1860s-1870s. Mature fruits and seeds are described for the first time. It is reportedly an endangered or possibly extinct species. Its present status is discussed and conservation measures are suggested.

INTRODUCTION

Certain areas in the Papanasam hills (Tirunelveli Hills) on the Western Ghats of Tamil Nadu, including Banatheertham, Kavathaliar, Pambar and Ullar were visited in December, 1986 for environmental assessment from a botanical standpoint in connection with the proposed dams there. In the collections made there was a myrtaceous member in fruits. A critical study of these specimens in the herbarium including the type and consultation of literature led to identify them as *Eugenia singampattiana* Beddome, a species endemic to the Tirunelveli—Travancore hills. The present collection happens to be the first after that of Beddome made in the 1860s-1870s. Moreover, it has never been collected in mature fruits and as a result fruits still remain undescribed. Hence a detailed description is given with emphasis on fruits and seeds. As the diagrams provided in Beddome's *Icones* (1868-1874) are excellent, an illustration is dispensed with and only photographs of an unmounted herbarium specimen and fruits and seeds are presented. Besides, notes based on field observations are furnished. As it is found to be a vulnerable species, desirable conservation measures are also suggested.

Eugenia singampattiana Beddome, Ic. 65. t. 273. 1868-1874; Duthie in Hook. f., Fl. Brit. India 2 : 506. 1879; Brandis, Indian Trees 326. 1906; Gamble, Fl. Pres. Madras 483. 485. 1919 (repr. ed. 1 : 243. 1957); Vajravelu in Pl. Conserv. Bull. 4 : 27. 1983; Vajravelu & Daniel in Jain & Sastry, Cat. Threaten. Pl. India 19. 1983; Chithra in Nair & A. N. Henry, Fl. Tamil Nadu : Analysis 1 : 153. 1983; Nair & Rathakr. in Nayar & Sastry, Red Data Book Indian Pl. 1 : 209. 210. 1987.

A small tree, up to 5 m tall, trunk *c.* 10 cm in diam. at breast height; branches from above breast height, few; bark ash-coloured, *c.* 3 mm thick; wood soft. Leaves opposite, 5-12 × 2-9 cm, broadly ovate or elliptic-oblong, cordate or rounded at base, entire at margins, abruptly acuminate or acute at apex, coriaceous, dark green above, pale beneath and pellucid penninerved with a prominent intramarginal vein; petioles up to 5 mm long. Flowers in short, terminal, crowded racemes, white, up to 2.5 cm across; bracts and bracteoles pubescent. Sepals 4, *c.* 4 × 5 mm, semi-orbicular, basally subtruncate and connate,

---

Date of receipt : 30.8.88. Date of acceptance : 10.8.89.

acute at apex, slightly pubescent outside. Petals 4, *c.* 10 × 8 mm, ovate, acute at apex, concave, reflexed, venose. Stamens numerous; filaments filiform, *c.* 7 mm long; anthers ovoid, glabrous, introrse. Ovary inferior, turbinate, c. 5 × 4 mm; style c. 9 mm long, glabrous. Berries globose, crowned with the persistent calyx, 1.5-3 cm across, yellowish orange and falling off at touch when mature, pericarp fleshy, *c.* 4 mm thick; seed 3, plano-convex, 1.3-1.5 × 1-1.3 cm, hard and black when mature (Figs. 1-3).

Local name : *Kattu koyya* (Tamil).

Distribution : Tirunelveli District, TAMIL NADU; Trivandrum District, KERALA.

Type : Described from the Singampatti Hills (Tirunelveli Hills) on the Western Ghats in Tamil Nadu (BM).

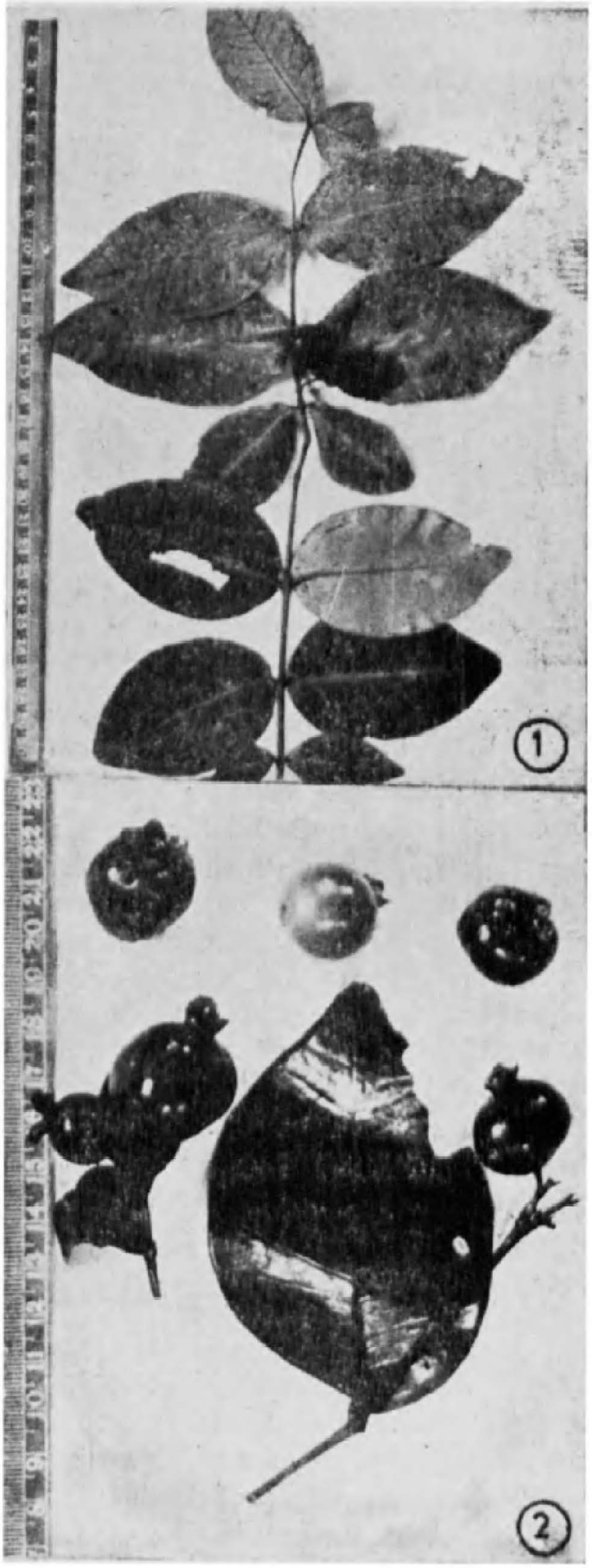
Fls. & Frts. : Oct.-Dec. ?

Ecology : Occurs on slopes in evergreen and semievergreen forests as an understorey tree, on humus-covered clayey soil. Associated with species like *Diospyros barberi, Maesa indica, Hibiscus canescens, Celastrus paniculatus, Lantana camara* var. *aculeata, Amomum cannaecarpum, Oryza meyeriana* ssp. *granulata, Pouzolzia wightii* etc.

Uses : The pericarp though very thin is said to be edible.

DISCUSSION

Beddome (1868-1874) who described *Eugenia singampattiana* based on his collections from the Singampatti hills on the Western Ghats (in Tirunelveli District, Tamil Nadu) observes that he has only met this tree on the said hills. These are now housed in the herbarium of the British Museum (BM). But there is a collection of this species in the Madras Herbarium (MH) made by Beddome himself from the adjoining Papanasam hills. The date of this collection is not known; probably was collected in the 1870s, soon after the publication of *E. singampattiana* in his *Icones*. On the sheet with the type specimens there are three from the Tirunelveli hills. The fourth one is from Athiramalai



Figs. 1-2 : 1. *Eugenia singampattiana* Beddome. 1. A twig with fruits. 2. Fruits.

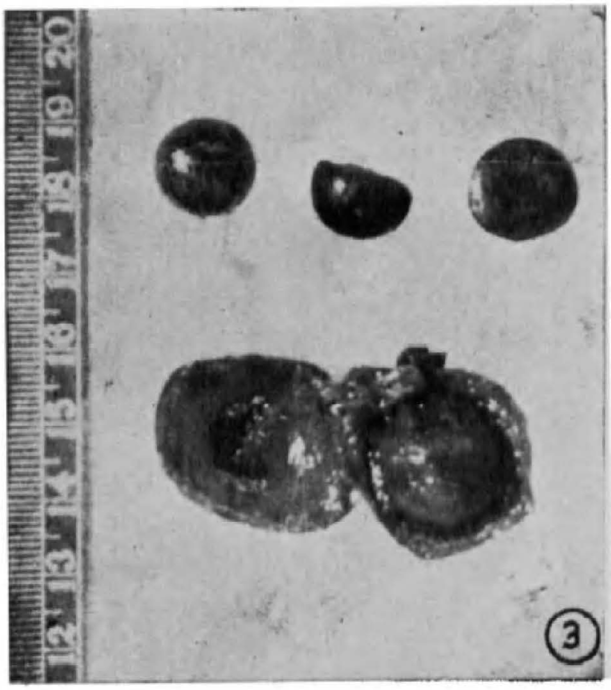


Fig. 3 : *Eugenia singampattiana* Beddome—Fruit and seeds.

(Attramalais), now in Kerala, a locality in the Tirunelveli-Travancore hills and not far away from the Papanasam hills. This specimen may also be from a later collection like the one from the Papanasam hills.

Vajravelu (1983) while mentioning *E. singampattiana* as an endemic species refrains from indicating its status. Vajravelu and Daniel (1983), on the other hand, categorise it as a threatened plant. However, Nair and Rathakrishnan (1987) consider that it is an endangered or possibly extinct species as it has never been re-collected after Beddome during the last 110 years. They further opine that the habitats of this species might have been destroyed with the activities connected with the construction of the Karaiar Dam in the 1830s-1840s. Such a destruction, if any, does not seem to have annihilated all the populations in the vicinity of the dam. However, whether the habitats in the type locality on the Singampatti hills were disturbed/destroyed at the time of construction of the Manimuthar Dam there in the 1950s is not known.

Admittedly all these conclusions have been arrived at by the authors quoted above based on the then available single collection in the Madras Herbarium. And they may not appear specious on two counts. Firstly, apart from the said collection in the Madras Herbarium, there are no specimens in the otherwise likely herbaria such as the Central National Herbarium (CAL) and the Kew Herbarium (K). Secondly, it has not been collected again in the likely adjoining areas in the past. Ramaswami (1914) did not collect it from Kannikatti, a part of the Papanasam hills, which is a little away from the locality from where the present collections were made. Again, it has not been collected from the type locality, the Singampatti hills, either (Sebastine & Henry, 1960). The reason may perhaps be that these plants flower and fruit for a short period and the visits of the earlier collectors did not coincide with their flowering/fruiting. Now that it has been rediscovered, we can be certain that this species is not extinct. Moreover, it also does not seem to be an endangered one. The present collections are from an area southeast of the Hope Lake (Kariar Dam), on way to Pambar. However, localised, low populations were also observed on way to Ullar and Kannikatti. They occur on slopes in dense evergreen as well as less dense semievergreen forests. All these areas are located around the Hope Lake on the southeast, south and southwest directions. It is probable that this species occurs throughout the Tirunelveli-Tranvancore hills here and there. Nevertheless, the whole area needs to be searched intensively and systematically for locating more populations.

The existing threats do not seem to be obvious or apparently serious. There is no human habitation in the vicinity of these areas except the one spot on way to Pambar a little away from which it is said that people gather for a certain annual festival. The oft-repeated threat, logging, does not loom large either. However, even though most of the trees had flowered profusely, fruits were not common. Reproductive biology of this species particularly fruit setting and seed viability and ecological factors governing this limited populations need to be investigated. An aspect that deserves much attention is the dispersal of its seeds and association of animals therewith, if any. What ought to be emphasised is that all these plants would become extinct should be the proposed dams come up. And when considered against this backdrop, this species falls under the 'vulnerable' category *needing protection.*

Lantana camara var. *aculeata,* the exotic weed, though is uncommon and appears less robust in the area at present, its further spread and effect on the native plants in general and *Eugenia singampattiana* in particular deserves serious monitoring. The ecological situation in which these plants grow is such that they are unlikely to thrive *ex situ* unless the various factors are studied and simulated. Hence, it is suggested that these plants be protected *in situ* with the assistance of the State Forest Department. The populations may be constantly monitored for the increase or decrease in the number of individuals and suitable remedial measures be taken if there is a decrease. Such a process is not impossible as all the areas referred to fall within the jurisdiction of the Mundanthurai Wildlife Sanctuary.

Specimens examined : Tinnevelly hills, *Beddome s.n.* (No. 2958), Attramalais, *Beddome s.n.* (No. 2959) (BM). Papanasam hills, *Beddome s.n.* (Acc. No. 20959) ; Tamil Nadu, Tirunelveli District, Papanasam hills, on way to Pambar, *c.* 3 km from Hope Lake, *c.* 550 m, 11.12.1986, *P. Daniel* 84771 ; on way to Pambar, *c.* 2 km from Hope Lake, 15.12.87, *A. Rajendran* 86733 (MH).

ACKNOWLEDGEMENTS

We thank Dr. N. P. Balakrishnan, Scientist-SE, Botanical Survey of India, Coimbatore for a critical reading of the manuscript and suggestions for improvement, Mr. B. V. Shetty, Scientist-SE, Kew for the information from Kew, Dr. E. Vajravelu, Scientist-SE, Botanical Survey of India, Coimbatore and Dr. M. Sanjappa, Scientist-SD, Botanical Survey of India, Howrah for the information from CAL, Mr. N. C. Rathakrishnan, Botanist, Botanical Survey of India, Coimbatore for his kind help in identifying the specimens, the Keeper of the Herbarium, British Museum (Natural History), London for sending the type on loan, Dr. A. N. Henry, Scientiest-SE, Botanical Survey of India, Coimbatore for enlightening us on the geographical nomenclature of the Tirunelveli—Travancore hills and Mr. M. Thiyagarajan, Photographer, Botanical Survey of India, Coimbatore for the photographs. The junior author is grateful to the Director, Botanical Survey of India, Calcutta for the award of a Junior Research Fellowship.

REFERENCES

RAMASWAMI, M. S. A botanical tour in the Tinnevelly hills. *Rec. Bot. Surv. India* 6 : 105-171. 1914.

SEBASTINE, K. M. AND A. N. HENRY. Studies on the flora of Singampatti reserve forest in Tirunelveli District, Madras State. *Bull. Bot. Surv. India* 2 : 27-42. 1960.